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DERWENT-WEEK: 200241

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TITLE: Recycling sulfuric acid solution
containing metals,
preferably test solutions from
determination of chemical
oxygen demand, involves
redox-controlled separation of
silver amalgam with iron and
precipitation as hydroxide

----- KWIC -----

Basic Abstract Text - ABTX (6):

ADVANTAGE - Spent solutions from the determination of
chemical oxygen demand
(COD) contain 20-40% sulfuric acid, mercury (Hg) and silver
(Ag) salts and
chromium(VI) in the form of potassium dichromate ($K_2Cr_2O_7$).

Existing methods
of removing the metals include precipitation of Hg as
sulfide by adding
iron(II) sulfide; passing the solution over an exchange
resin, followed by
disposal as special waste; precipitation by adding copper,
which leaves a
solution containing chromium(III) and copper(II); or
2-stage precipitation by
adding sodium chloride and then iron. The present method
is economical and
simple, avoids the drawbacks of existing methods and allows
not only recovery
of Hg and Ag but also recycling of the sulfuric acid.